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REMARKS

Each of independent claims 2, 3, 5, and 6 has been similarly amended to clarify the subject matter that the applicants regard as their invention. In each of those claims the moment of inertia recitations have each been amended to clarify that the thickness reflected in those claims is that of the respective leg of the plate. Additionally, the desired result of what is essentially an iterative process for arriving at the minimum bending moments has been added to each of those claims by the recitation "to thereby provide a plate of minimum longitudinal leg material usage and minimum weight for the predetermined longitudinal force that is applied to the plate opening at the predetermined lever arm distance relative to the longitudinal leg."

Claims 2, 3, 9, and 10 were rejected as directed to non-statutory subject matter. The basis for that rejection was that those claims "do not require any physical transformation" and that they did "not produce a useful concrete, and tangible result." Each of independent claims 2 and 3 has been amended as noted above and as so amended they each recite the useful, concrete, and tangible result of a plate having minimum material usage and minimum weight. That desired result is an object of the invention as is pointed out in paragraph [0008] of the substitute specification. Therefore independent claims 2 and 3, as well as respective dependent claims 9 and 10, each now clearly define statutory subject matter.

Claims 5-8 were rejected as anticipated by the Turner '396 reference. The Turner reference does not disclose a chain plate in which the plate geometry is such as to provide a minimum bending moment within either the longitudinal legs or the vertical legs of the plate, as claimed in independent claims 5 and 6. Nor does the

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Turner reference teach or even remotely suggest a plate having a minimum bending moment. Instead of providing a plate having minimized bending moments in the longitudinal or vertical legs, as claimed in respective claims 5 and 6, Turner teaches balancing the stresses and the moments in the inner and outer links of a chain (see, e.g., Turner, col. 2, lines 32-34) that includes both thin links and more robust, or stronger, links in order "to better [the] load distribution among the links" (Turner, col. 7, line 59). The Turner reference is thus not directed to determining minimum bending moments in the longitudinal and vertical legs of a link plate to minimize material usage and consequently weight, as claimed in each of independent claims 5 and 6, but only to equalizing the loads carried by plates having a different plate thickness in a plate link chain that includes both thin plates and more robust plates. It is clearly directed to the equalization of plate loads, not to the minimization of material usage and weight.

In addition to being directed to a different chain structure, one involving a chain having both thin and more robust plates that are installed in a particular pattern within the chain, the Turner reference does not teach the relationship between plate geometric factors in order to achieve minimum bending moments within the longitudinal and vertical legs of a plate as claimed in independent claims 5 and 6. Nor does the Turner reference teach or suggest modifying plate geometric factors to achieve a plate that has minimal leg bending moments. Again, the Turner reference is directed to equalizing the loads assumed by plates positioned across the width of a chain and having different plate thicknesses, not to minimizing bending loads imposed on the legs of the plates of the chain. Moreover, the bending and bending

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moments discussed throughout the Turner reference are not plate leg bending moments, but are pin bending and pin bending moments, (see, Turner, col. 4, lines 44-47; col. 5, lines 17-19; col. 6, lines 27-29; and col. 7, lines 7-9). Therefore, the Turner reference, which relates to plates in which stresses and moments are equalized and not to plates having minimized leg bending moments, neither discloses nor even remotely suggests the invention as it is claimed in independent claims 5 and 6.

Claims 7 and 8 depend from amended claims 5 and 6, respectively. And in that regard the Turner reference does not disclose a factor k as recited in either of independent claims 5 and 6 of the present application.

With respect to claims 5-8, as presented those claims are product-by-process claims and the process steps recited therein must be given weight in a patentability determination. And the recited functional features of minimum material usage and minimum weight cannot be ignored. As was stated by the Board of Patent Appeals:

Although we have sustained several of the Examiner's rejections we here wish to specifically note that contrary to the Examiner's assertions, functional language in the claims must be given full weight and may not be disregarded in evaluating the patentability of the subject matter defined employing such functional language. However, the applicant must establish that what is taught by the reference does not inherently function in the same manner required by the claim; cf. *In re Hallman* decided by the CCPA July 16, 1981, 655 F.2d 212, 210 U.S.P.Q. 609.

Ex parte Bylund, 217 U.S.P.Q. 492, 498 (Bd. App. 1981).

And the Federal Circuit has held to the same effect. *K2 Corp. v. Salomon S.A.*, 52 U.S.P.Q.2d 1001, 1004 (Fed. Cir. 1999) ("The functional language is, of course, an additional limitation in the claim.").

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Finally, it should be noted that the counterpart European application that stems from the same PCT application as does the present application has been patented as EP 1 499 817 B1, a copy of which is attached. Although the text of that patent is in German, the patented claims are presented in English on pages 9-12. The patented claims are very similar in terminology and scope to those presented herein, and both method and article claims are included. Additionally, I am informed by my German associate that the corresponding Chinese application has also matured into a patent.

Based upon the foregoing amendments and remarks, each of the claims in this application are urged clearly to be allowable in that the method claims define statutory subject matter and the article claims patentably distinguish over the Turner reference that was cited and relied upon by the examiner, whether that reference be considered in the context of 35 U.S.C. § 102 or of 35 U.S.C. § 103. Consequently, reconsideration and reexamination of the application is respectfully requested with a view toward the issuance of an early Notice of Allowance.

The examiner is cordially invited to telephone the undersigned attorney so that any question he might have can be quickly resolved in order that the present application can proceed toward allowance.

Respectfully submitted,



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